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EXAMINER

PHAM, HOA Q

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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.



## **DETAILED ACTION**

### ***Priority***

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

### ***Drawings***

2. Drawings filed on 2/19/09 are accepted.

### ***Claim Rejections - 35 USC § 102***

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claims 1, 7-10 are rejected under 35 U.S.C. 102(e) as being anticipated by Lezec et al (7,057,151).

Regarding claims 1 and 9, Lezec et al discloses a substrate of a target substance detection element to be used for a detection apparatus for detecting a target substance, utilizing surface plasmon resonance (column 3, lines 58-64), comprising: a base (140) (i.e., substrate) (column 19, lines 33-34) and a metal structure (121) arranged on a

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surface of the base in a localized manner, said metal structure (121) having a crossing section (T) (figures 19a-19c and column 19, lines 26-63).

Regarding claim 7; column 7, lines 38-42 teaches that the metal structure (20) is made of a metal selected from gold, silver, aluminum or chromium.

Regarding claim 8, column 8, lines 24-26 and column 10, lines 38-46 teach that the base is optically transparent (i.e., glass plate).

Regarding claim 10, see figures 21-23 for the use of a plurality of apertures (30, 30').

### ***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 2-6, 11-17, 20-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lezec et al in view of Lakowicz et al.

Regarding claims 2-3, Lezec et al does not explicitly teach that for the metal structure has a largest length within a range 10 nm to 500 nm; however, such a feature is known in the art as taught by Lakowicz et al (of record). Paragraph [0118] of

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Lakowicz et al teaches that the metal structure has a largest length within a range 10 nm to 500 nm. It would have been obvious to one having ordinary skill in the art at the time the invention was made to choose the length of the metal structure of Lezec et al within a range taught by Lakowicz et al so that it suitable for the invention of Lezec et al.

Regarding claims 4-6, it would have been obvious matter of design choice to use a plurality of metal structures that are spaced apart from each other by a distance within a range not smaller than 50 nm and not greater than 2,000 nm or not smaller than 150 nm and not greater than 1,000 nm which ever suitable for the device.

Regarding claims 11-12, it would have been obvious matter of design choice to use a plurality of metal structures that are spaced apart from each other by a distance within a range not smaller than 50 nm and not greater than 2,000 nm or not smaller than 150 nm and not greater than 1,000 nm which ever suitable for the device.

Regarding claim 13, it would have been obvious to one having ordinary skill in the art at the time the invention was made to arrange the outer frame with an inner structure because this is a known arrangement which is known to serve for the purpose of Lezec et al.

Regarding claim 14/(1-3, 7-8) and 15/(1-3, 7-8); see figure 1 of Lakowicz et al.

Regarding claims 16/15/14/(1-3, 7-8) and 17/14/(1-3, 7-8), see figure 15 of Lezec et al or paragraph [0122] of Lakowicz et al for the use of a light detector.

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Regarding claims (18-19)/14/(1-3, 7-8), 20/19/14/(1-3, 7-8) and 21/20/19/14/(1-3, 7-8), see paragraph [0148] or claim 40 of Lakowicz et al for the target capturing body is one or more antibodies, fragments of antibodies, etc...

Regarding claims 14/(4-6, 9-13), 15/(4-6, 9-13), see figure 1 of Lakowicz et al.

Regarding claims 16/15/(4-6, 9-13), 17/14/(4-6, 9-13), see figure 15 of Lezec et al or paragraph [0122] for the use of a light detector (114).

Regarding claims (18-19)/14/(4-6, 9-13), 20/19/14/(4-6, 9-13) and 21/20/19/14/(4-6, 9-13); see paragraph [0148] or claim 40 for the target capturing body is one or more antibodies, fragments of antibodies, etc...

### ***Response to Arguments***

7. Applicant's arguments filed 11/30/09 have been fully considered but they are not persuasive. Applicant's amendment to claims 1 and 9 in which the claimed invention is narrow to the use of a "crossing section"; however, this limitation is well known in the art as taught by Lezec et al mentioned above.

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Following references disclose a metal thin film: Ueyanagi (6,614,742) and Ueyanagi et al (7,544,922).

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9. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to HOA Q. PHAM whose telephone number is (571)272-2426. The examiner can normally be reached on Monday through Friday, 7:00 AM TO 3:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tarifur Chowdhury can be reached on (571) 272-2287. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Hoa Q. Pham/  
Primary Examiner  
Art Unit 2886

HP  
March 15, 2010